



EFFECTIVENESS OF GUIDED SELF- STUDY IN BACHELOR PHYSIOTHERAPY STUDENTS

DR. SLAVKO ROGAN

MONDAY, MAY 23RD 2022 AT 15:30

ROOM K.2.55, CAMPUS ETTERBEEK

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ABSTRACT OF THE RESEARCH

Physiotherapy is a science-based profession. Physiotherapists support individuals affected by injury, illness or disability by providing non-invasive assessments and treatment techniques following a hands-on approach such as manual therapy or facilitation of movements and rehabilitation exercise.

The learning and knowledge of practical manual techniques (hands-on) is essential. As a result of the Bologna Process, the learning focus shifted from a teaching perspective towards a learner perspective. Learning is "self-guided or self-directed or self-determined" with learning experiences occurring outside of traditional classroom settings or school buildings. For this purpose, self-study time must be incorporated into the curriculum. The Bachelor's degree program in physiotherapy at the Bern University of Applied Sciences (BFH) must offer 14 out of 30 hours (1 ECTS) in on-site teaching while 16 hours are self-study. The literature described three types of self-study: free self-study (no relation to the curriculum content), individual self-study (relation to module content) and guided self-study (relation to curriculum). But evidence on how undergraduate physiotherapy students can learn practical techniques remains poor.

The aim of this doctoral thesis was three-fold. First, a mixed method study was performed to illustrate the use of self-study in medicine and health profession higher education curriculum and to develop a self-study / guided self-study (G-SS) concept which can be used to promote learning gain of manual techniques in undergraduate physiotherapy students at the BFH (Chapter 2). Second, the self-study / guided self-study concept was evaluated for its feasibility (Chapter 4 and 6). Third, the efficacy of the guided self-study concept was systematically assessed with the use of a randomized cross-over controlled designed trial in the first (Chapter 3 and 4) and third semester (Chapter 5 and 6). This doctoral thesis addressed three research questions: 1. Content: which educational components define the concept of guided-self-study? 2. Feasibility: which factors should be considered in the implementation of the guided self-study concept into the Bachelor's physiotherapy curriculum in order to achieve learning success in acquiring practical techniques? 3. Contribution of the G-SS concept on the learning success among undergraduate physiotherapy students studying at the BFH?

The studies of this doctoral thesis could identify solutions regarding the three research questions. The systematic mixed-method study could determine fifteen articles, totaling 3949 volunteering students. The methodological quality of the articles ranged from average to good. The results suggested that self-study/guided self-study may be beneficial in fostering students learning gain. Furthermore, self-study / guided self-study should be structured in such a way that individual learning, dyad and group learning are possible. The content is based on the principles of the pedagogy-andragogy-heutagogy continuum (P-A-H-C), the student centered-approach and the randomized controlled study design. Subsequently, an eight day-cycle guided self-study program (included P-A-H-C and problem-based learning approach) was developed, and their feasibility evaluated.

Both studies (Chapter 4 and 6) were feasible but with modification. The outcome exposure shows that the timing and duration of day eight (phase 3 to 5) in the first and third semesters were well designed. No program differentiation between the cases and the module content was determined. The students' responsiveness in the first semester (targeted: 80%; reached: 61%) and the third semester (targeted: 87%; reached: 42%) was not achieved. The acceptability was low in both semesters. Because the eight-day cycle was not well scheduled and therefore students' workload was too high.

G-SS showed statistically significant differences in the practical first semester exams OSCE (Objective Structured Clinical Examinations) ($p = 0.003$) and multiple-choice questionnaires (MC) ($p = 0.003$) in the guided self-study group [OSCE: 41.96 (SD 0.19); MC: 66.10 (SD 2.47) points] compared to the control group [OSCE: 39.37 (SD 3.34); MC: 60.74 (SD 7.73) points]. All students in the G-SS group passed the exams while four students in the control group failed.

In the third semester exams (OSCE and MC) no between-group differences were found. In the G-SS group two students and in the control group three students failed the exams. However, a significant positive Spearman correlation was determined for a students' responsiveness rate of 74% ($n = 17$ students) with the OSCE results ($\rho = 0.710$; $p = 0.003$) and MC results ($\rho = 0.879$; $p < 0.001$).

It can be concluded that G-SS has the potential to enhance knowledge of practical skills in undergraduate physiotherapy students if the following aspects are taken into account:

- G-SS should be implemented in the curriculum while keeping the workload within the defined ECTS (Chapter 7).
- Content of the G-SS cases should be aligned with the curriculum content.
- Students must be informed during the study period.
- University lecturers should be convinced of the student-centered learner approaches.

CURRICULUM VITAE

Slavko Rogan is a physiotherapist (MSc) and osteopath (MSc). He obtained a PhD at the Maastricht University in 2016. He is lecturer at the Bern University of Applied Sciences, Department of Health Profession, Division of Physiotherapy.

He completed a Master of Arts in "Further Adult Education" (2015) and Master of Arts in "School Management" (2018) both at the University of Kaiserslautern (Germany) where he is currently studying in the Master's program "Organisation and Communication".

